

## ABSTRACT

The present invention provides a novel method for diagnosing squamous cell carcinoma or prostate cancer in a tissue sample. The method does not involve visual examination of morphology. The method comprises providing a sample from the subject and assaying for the presence, or absence or reduced level of expression of a novel gene, hereinafter referred to as the "DESC1 gene". The method comprises isolating RNA, preferably mRNA from tissue samples, and detecting the mRNA which encodes all or part of DESC1 protein. Preferably the detection comprises amplifying the mRNA, preferably by reverse transcriptase-PCR using primers specific to a region in the DESC1 gene; and detecting the presence or absence of the amplified product to determine whether DESC1 mRNA is present or absent in the tissue sample. Alternatively the detection comprises separating the RNA which encodes all or part of DESC1 protein from the total RNA, preferably by separating on an agarose gel, and detecting the mRNA encoding DESC1, preferably by using a probe specific for such mRNA. Optionally, the DESC1 mRNA when present, is also quantified using conventional techniques. The present invention also relates to polynucleotides which encode the DESC1 protein, to the DESC 1 protein, and to antibodies to the DESC1 protein. The present invention also relates to hybridization probes, and to primers useful in the method of detecting DESC1 mRNA.